

**From:** [Watts, Joshua A CIV USARMY CENWK \(USA\)](#)  
**To:** [Osolin, John](#)  
**Cc:** [Puvogel, Rich](#); [King, Aaron S CIV USARMY CENWK \(USA\)](#)  
**Subject:** FW: Monroe Township: BFI Technical Review Report  
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John,

BLUF: Vapor pressure contributions from VOCs may play a role, but we think some work can be done to evaluate it. We share some concerns with the Town regarding the inability to demonstrate the cause of the odor issue and the monitoring plan following the initial re-introduction of leachate to the sewer.

The presence of VOCs in the leachate constituents could/likely volatilize and result in a higher vapor pressure than if it were just clean water, and turbulent flow (e.g., caused by steep slopes within pipes from MH-4 to MH-5 and in manholes like MH-5) can assist with the volatilization. However, it is uncertain if that alone is enough to overcome a properly functioning P-trap. BFI may be able to calculate the vapor pressure that would be expected to result from leachate (concentrations in the vapor phase can be estimated from the concentrations in the liquid phase) in the sewer at different flow rates (where the flow rate affects the volume available in the sewer for vapors to occupy). Our understanding is that prior to the last two years out of 40 or so years of operation, there was only one complaint related to sewer gases entering a home and it was related to a broken P-trap (which, upon fixing, addressed the issue). So it seems possible that there were similar leachate composition and discharge flows at some point in the past where there wasn't an odor issue.

The presence of a physical blockage (e.g. that was either cleared during sewer cleaning or on its own; sewer stretches where the slope is low may be more prone to blockages), an unusual surcharge condition (e.g., a resident emptying a swimming pool into the sewer), and sudden changes in leachate discharge flow rate (which has been addressed by the installation of a VFD) that were identified as potential factors seem reasonable. However, and ultimately, the cause of the odors from landfill leachate in the sewer has not been demonstrated, additionally some of the factors that BFI identified are things that they would seem to have little or no control of (blockages, unusual surcharges) and seemingly could occur at any time in the future.

In their Leachate Introduction Plan (Feb 2021), BFI proposes returning leachate to the sewer system, with continuous monitoring of flow (at MH-4 and MH-7) and pressure (at MH-1 through MH-7) on a temporary basis and to periodically check for gases escaping from manholes with a PID. After initial data is gathered during leachate reintroduction, BFI intends to remove the temporary monitoring equipment and only monitor and record the amount of leachate being discharged to the sewer. Our concern with this approach is that removal of the continuous monitoring equipment following initial testing would not allow for detection of high sewer pressures (regardless of the cause) and adjustment of the leachate discharge to the sewer to account for the high pressures in future operations.

Additional note: the technical review by CME indicates their opinion is based on a review of the introduction plan and **LIMITED** documents made available – this statement is made several times throughout the paper, which raises some questions with the “exact” conclusions, claims, and recommendations made by CME if it was based on limited data. We do not question their qualifications and they make good points; however, I do question if their conclusions/recommendations would change if additional data is gathered or made available. Aaron and I can be available to discuss if needed.

Thanks,

Josh

Joshua A. Watts, PE, PMP

Project Manager

U.S. Army Corps of Engineers

Office: (816) 389-3199

Cell: (816) 266-3785